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ABSTRACT

Phase 2 of this project presents a skeletal model for evaluating vocational education programs which can be applied to secondary, post-secondary, and adult education programs. The model addresses 13 main components of the vocational education system: descriptive information, demonstration of need, student recruitment and selection, curriculum, guidance and placement, facilities, community involvement, youth organizations, cooperative programs, program's effect on students, holding power and popularity, satisfaction of various audiences with program, and program staffing and administration. Each component consists of a general rationale for evaluating that aspect of the vocational program, specific questions or subcomponents, and general approaches required to investigate those questions. In addition, recommendations for research and development relating to each component are provided. (NJ)

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EVALUATION OF VOCATIONAL TECHNICAL EDUCATION

PHASE II

A Skeletal Model with Suggested Research and Development Activities

May, 1976

Prepared by: New Educational Directions, Inc.

for: The Indiana State Board of Vocational Technical Education

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CE 009 059

Following is a skeletal model for evaluating vocational-technical education. The model addresses 13 main components of the vocational education system, with each of these components consisting of several subcomponents which may be assessed in the course of an evaluation effort.

The model is designed to be applicable to the individual program, the level at which most data collection takes place, and where evaluation results are utilized in future program planning. The collation of evaluation results from a number of individual programs of instruction would result in a comprehensive evaluation of vocational education at the institutional, regional, or state-wide level.

Most components of the model apply equally to secondary, post-secondary, and adult education and may even apply to private institutions. Both process and outcome components of the vocational system are addressed.

This model is not intended as an evaluation instrument. Rather, it suggests WHAT to evaluate and WHY; the "how" question is addressed only in a very global sense. For example, it is suggested that a number of components may be assessed through questionnaires. In order for this skeletal model to become an operational one, these questionnaires must be developed, and many procedural questions must be answered.

In its present form, this document may be useful to state monitors in conducting site visits, in that it suggests factors of the vocational program which may play an important role in determining the program's overall level of success. On-site observation and interviewing are key to the implementation of many components of the evaluation model. Even without interview guides and rating sheets, monitors may find the model helpful in planning their agendas for site visits.

Each component consists of (a) the general rationale for evaluating that aspect of the vocational program; (b) specific questions or subcomponents relating to the component; and (c) general approaches required to investigate those questions.

In addition, recommendations for research and development relating to each component are provided. In many cases the results of recommended research would be needed in order to fully implement the evaluation model.

I. DESCRIPTIVE INFORMATION

A. General Rationale

A satisfactory global view of the statewide system of vocational education necessitates the availability of data such as the number of students served, the enrollments of various areas of instruction, and the geographic distribution of vocational programs. For example, current enrollments by area can be compared to

short-term manpower needs projections to indicate the desirability of expanding some programs and phasing out others. Descriptive data reviewed over a period of several years may provide a basis for predicting future demands for instructional personnel and facilities. Descriptive data is also needed for federal reporting, program reimbursement, and distribution to various audiences for planning purposes.

B. Subcomponents

1. What geographic area constitutes the primary service area of this site? (A site may be an area vocational school, a comprehensive high school, a campus of IVY Tech, etc.)
2. What population(s) are served by this site (secondary, post-secondary, adult)?
3. List of all programs at the site.
   At the local or regional level, this indicates the variety of vocational options potentially open to a student.
4. Job title(s) for which a student in each program is prepared.
   The curriculum may be viewed with respect to job descriptions.
5. Associate degree or technical certificate awarded upon completion.
6. List and description of all courses in the program.
   This will be needed in assessing the program curriculum.
7. Method of instruction (e.g., co-op, laboratory, etc.).
8. Number of instructors assigned to the program.
   a. Part-time
   b. Full-time
   c. Full-time equivalents
9. Number of recent school leavers
10. Number of recent graduates
11. Number of new students
12. Current program enrollments
    a. by sex
    b. by race
    c. handicapped
    d. disadvantaged
13. Current enrollments in each course.
    A distinction should be made between program enrollees and others enrolled in the course. This information will suggest the degree to which the course provides preparation for employment as distinguished from exploratory or enrichment experiences, and the number of program enrollees is also used in the program reimbursement formula.

C. Possible Data Collection Approaches

Most of the suggested subcomponents of descriptive information are addressed in forms recently developed by NED and the SBVTE for use at the post-secondary level: the Annual Program Enrollment Report and the Program Report for each academic session. These forms, which are the responsibility of each site director, could be revised to include additional subcomponents and to apply to the secondary and adult levels. Information for several subcomponents (i.e., 1, 2, 4, 5, 6, and 7) need be reported only when new sites, programs, or courses are instituted. Limited auditing of reported information is recommended.

D. Recommended Research and Development

1. Identification of job titles and corresponding job descriptions to which various types of vocational programs lead or may lead. A combination of two methodologies is recommended:
   a. Compile job analyses and vocational program descriptions. Match appropriate jobs to program descriptions to determine the potential jobs of program leavers.
   b. Perform a follow-up of leavers from vocational programs of various descriptions. Determine the titles and descriptions of the jobs leavers actually obtain.
2. Compile a descriptive profile of students presently considered "handicapped" or "disadvantaged" and of vocational programs in which such students are enrolled. Determine the extent of congruence from locale to locale of criteria used in identifying the disadvantaged and handicapped and of approaches used to meet the needs of these populations. The results would be (a) standardized operational definitions of handicapped and disadvantaged students and (b) a sharing of methods used by various Hoosier programs for identifying, recruiting, and training these individuals.

II. DEMONSTRATION OF NEED

A. General Rationale

Two purposes of vocational education are to fulfill the educational needs of students and to fulfill the manpower needs of employers. The value of any vocational education program therefore depends upon the existence of the student and employer needs which the program is designed to fulfill. Clearly, the need for a new program should be demonstrated before its institution, but it is also desirable to periodically assess the need for ongoing programs. It is traditionally the responsibility of the LEA to compile information concerning local needs.

The state and LEA are jointly responsible for determining whether the initiation, maintenance, expansion, or revision of various programs is justified in light of identified needs. Such determinations cannot be effectively made without knowledge of the factors considered in assessing local needs for vocational education, the manner in which information was collected, and the results of the needs assessment.

The purpose of including a "demonstration of need" component in a statewide evaluation system is to provide state, regional, and local decision-makers with guidelines for assessing the need for various vocational education programs based upon needs assessment data compiled at the local level. That is, this component is not intended to provide the methodology for conducting a needs assessment but rather it is intended to provide a means for evaluating the vocational education system's needs assessment functions so that the congruence between educational programs and actual needs can be effectively assessed.

B. Subcomponents

1. What factors are investigated in assessing the need for initiating, maintaining, expanding, or revising a program? Some potentially relevant factors are listed below:
   a. Manpower data and projections.
      Do ESD statistics or other available data indicate a demand for personnel trained in the program area under consideration? Are local, regional, state, or federal labor statistics given most emphasis?
   b. The particular skills in demand within vocational areas of instruction.
      Is this kind of information available and used in program development?
   c. The particular employee attitudes in demand.
   d. Preference of employers in this vocational area to hire trained personnel rather than to train on the job.
   e. Statements of student career goals.
      If a new program is proposed, is there evidence of student demand for this program?
   f. Follow-up of program leavers from the past.
      Does follow-up data from ongoing programs indicate the need for program revision?
   g. Number of program requests per available slot.
      Based on student demand, should an ongoing program be maintained, expanded, or phased out?

2. Data collection strategies used in assessing needs.
   Can the results of the needs assessment be considered a reliable measure of each factor considered in the study?
3. Results of the needs assessment.
   Do the results indicate a real need for initiating, maintaining, expanding, or revising the program?
4. Alternatives to the proposed program which were considered.
   If a vocational education need is shown, there are alternative strategies for meeting that need. For example, the identified need may be met by adding a new program to any of several existing institutions such as a private school, a local university, an IVY Tech extension, a comprehensive high school, or a community-based training program. Were solutions other than the proposed one considered? Were they rejected on a rational basis?

C. Possible Data Collection Sources

Needs assessment reports provide the data base for this component. Some clarifying interviewing may be required with those responsible for conducting the needs assessment.

D. Recommended Research and Development

1. The development of a system for conducting local needs assessments. The system should include the factors listed above and perhaps others, though the option of investigating any given factor could be left to the LEA. Sources for identifying existing information such as manpower statistics should be described. Sampling plans and data collection instruments should be included, as well as a format for reporting results. The package must be adaptable to any locale, level, and program area.
2. Factors b, c, and d listed under subcomponent 1 above are more appropriately investigated state-wide rather than at the regional or local level, since these factors probably vary less than the others from locale to locale. This state-wide needs assessment should be performed periodically, every three to five years.
3. The development of a system for reviewing and evaluating applications for new programs. The system would include evaluation criteria and their corresponding weights, as well as the composition of review panels and a flowchart of the application's progress through the review and selection procedure.
4. The development of a similar system for reviewing needs assessment data concerning existing programs.

III. STUDENT RECRUITMENT AND SELECTION

A. General Rationale

Vocational programs are intended to serve particular target populations, usually those who are in need of training to achieve realistic occupational goals. If recruitment and selection procedures successfully enroll members of the program's "target population," both student and employer needs can be met. If recruitment and selection procedures are inequitable or inconsistent with program intent, the program is unlikely to meet its objectives and likely to come under criticism. Since the enactment of Title IX this area will receive particular attention.

B. Subcomponents

1. Recruitment Strategies.
   a. For adult and post-secondary programs, what media are used to make program availability known?
      Are these media likely to reach target populations, including persons not presently in school?
   b. At the secondary level, is the student body at large informed of vocational education opportunities, or is there de-facto pre-selection by excluding some groups from information?
   c. What affirmative actions are taken to overcome sex-stereotyping in vocational program choice?
   d. Are unrealistic promises made at the recruitment stage? Are students able to obtain accurate information about the program itself, costs, selection procedures, etc.?
2. Selection procedures
   a. Who makes selection decisions? Is this person or group given guidelines for selection, and are they followed?
   b. In the case of area schools, how are sending school allotments determined? Are they based upon a proportion of total school enrollment, or upon identified needs of each school?
   c. What selection criteria are used, and how?
      1. Academic grades
      2. Conduct records
      3. Teacher recommendations
      4. Evidence of student commitment
      5. Standardized test scores

6. Grade level
7. Sex
8. Demonstrated prerequisite competencies.

Are criteria spelled out and objectively applied? Is each criterion relevant to the philosophical base of vocational education? For example, are standards of academic ability so high that the target population is excluded, so low that many students' probability for successful employment in that field is unacceptable, or at a level appropriate to the demands of the discipline?

3. Where resources are limited, is enrollment also limited?

One way of avoiding the potentially sensitive issue of selection is to accept all applicants. This practice may, however, result in poor quality services to many rather than high quality services to a few, or in a winnowing process wasteful of the student's time and of the program's resources.

C. Possible Data Collection Approaches

Recruitment and selection policies can be determined by written policy statements and interviews with those responsible for policy-making. Actual practices are best investigated through questionnaires or interviews with vocational and other students, counselors, and admissions officers. Student records also provide information concerning selection practices when the records of selected students are compared to those of rejected students. The program's student/teacher ratio supplies an index of subcomponent 3.

D. Recommended Research and Development

1. The identification of relevant selection criteria for various types of vocational programs.
2. An investigation of current recruitment and selection procedures with recommendations for improvement.
3. The development and demonstration of successful affirmative action strategies for counteracting sexual stereotyping of vocational program enrollment.
4. An investigation of the most effective means of communicating vocational education opportunities at the post-secondary and adult levels.
5. An identification of criteria for assessing the ethics of practices in the recruitment and selection process.

IV. CURRICULUM

A. General Rationale

The curriculum is the foundation of the vocational program and its evaluation is thus an essential component of the total evaluation system.

B. Subcomponents

1. Curricular objectives.

   Well-formulated objectives provide a program with a sense of direction and purpose as well as a basis for continuous assessment and planning. Objectives should be stated in terms of desired changes in students as a result of the program and may take the form of competencies required for employment in specified job categories. Program and course objectives may be evaluated according to the following criteria:

   a. Are program objectives stated?
   b. Are course objectives stated?
   c. On what basis were they formulated?
   d. Are objectives measurable?
   e. Are objectives realistic given the student population, available staff, facilities, and time?
   f. Are objectives periodically reassessed in light of the program's experiences?

2. Individual courses in the program.

   a. Course content--does it relate to course and program objectives?
      --has the skill content been validated regarding realistic actual practices required?
   b. Resources utilized--text, equipment, guest lecturers, etc.

3. Program curriculum

   a. Curriculum development--who is responsible for it and on what basis is it done?
   b. Sequence of courses constituting the program. Do courses build upon past ones in a logical and non-redundant manner? Are there curricular provisions for meeting all program objectives? Do all vocational courses relate to a program? Are programs comprehensive or are most a single course?
   c. Provisions for advanced placement and other forms of flexibility to meet individual needs.

4. Standards of student achievement
   a. Grading practices
   b. Measurement of student competencies
   c. Criteria for program and course completion
5. Coordination among:
   a. Courses in the program
   b. Academic courses
   c. Work experience
   d. Outside related activities such as youth organizations

C. Possible Data Collection Strategies

Examination of curriculum guides, written objectives, course textbooks, course descriptions, and interviews with all staff members will be needed.

D. Recommended Research and Development

1. Develop and demonstrate pilot programs using a systematic management-by-objectives approach.

V. GUIDANCE AND PLACEMENT

A. General Rationale

Vocational counseling and placement are important student services in themselves and also affect other components of the vocational education system. Particularly at the secondary level, counselors have a strong influence over the composition of the vocational student body; the results of this will influence all of the program's outcomes. The quality of placement services may influence both the program's popularity and its measured success in preparing students for employment.

B. Subcomponents

1. Counselors
   a. Qualifications as a vocational counselor.
   b. Knowledge of available programs, job market, and a variety of occupations.
   c. Availability of services to the student as measured by:
      1. Vocational student/vocational counselor ratio for the comprehensive high school and student/counselor ratio at all levels.
      2. Counselor's job responsibilities and the approximate proportion of time devoted to each. If counselors are spread too thin, vocational counseling services may suffer.

d. Coordination

1. Between high schools and area schools
2. Between secondary and post-secondary institutions.
3. Among post-secondary institutions.
4. With adult education.

2. Placement

a. Does the institution provide both job and educational placement services?

b. Source of job opening information.

c. Source of training program information.

d. Method of matching students to jobs or schools.

e. Success rate--What proportion of program leavers are placed? Does follow-up data indicate that placements are satisfactory?

C. Possible Data Collection Approaches

1. Interviews with counselors and other program personnel.
2. Interviews with students.
3. Placement records.
4. Program leaver follow-up data.

D. Recommended Research and Development

1. Assessment of vocational counseling needs, to answer such questions as: What are the characteristics and qualifications of those presently considered vocational counselors? What are the unique counseling needs of actual and potential vocational students? What is required to meet these needs? Results of such a study may be used to revise qualifications for vocational counselors and/or to develop inservice training programs in this area.
2. Development of a job placement model for use by vocational programs at all levels.

VI. FACILITIES

A. General Rationale

Buildings, equipment, and materials represent sizeable investments in most vocational programs. At the same time the availability of adequate facilities is an important determinant of the programs' scope and quality. It is, therefore, essential that vocational funds be invested in a cost-effective manner. Including a facilitites component in the evaluation system is desirable because appropriate recommendations for improving the cost-effectiveness of facilities can have a strong and positive impact on program quality.

B. Subcomponents

1. An inventory of major equipment and cost.

   A description of equipment is needed before its need and utilization can be evaluated. Costs can also be related to usage to determine cost-effectiveness. 'Major' may be defined in terms of an arbitrary minimum cost.

2. The relationship between program objectives and facilities.
   a. Are all facilities which are required to meet program objectives available.
   b. Are all facilities necessary to the fulfillment of program objectives? That is, are existing facilities both sufficient and justified in terms of program objectives?

3. The relationship between facilities and those found currently in business and industry.

   Training in the program should transfer positively to work situations. If equipment used for training is substantially different from that commonly used elsewhere, this training may not transfer or, worse yet, there may be a negative transfer of learning to the work situation.

4. Maintenance of facilities.
5. Instructor's proficiency in operating equipment and in demonstrating the method of operation.
6. Compliance with OSHA regulations and other applicable safety standards.
7. The method of monitoring or controlling the use of expendable materials.
8. Utilization of building, rooms, and major pieces of equipment, as measured in one or more of the following ways:
   a. The number of students using the facility per year.
   b. The length of time any individual student would utilize the facility.
   c. The approximate proportion of time the facility is in use.
   d. Use by multiple programs, such as night or summer courses in addition to regular ones.

If costly facilities are under-utilized, it may be recommended that multiple programs share facilities and/or that attempts be made in the future to utilize community resources for instruction on specific peices of equipment.

C. Possible Data Collection Approaches

Institutional records, if continuously maintained, should provide an inventory of facilities and their cost, as well as data needed to compute some of the suggested measures of utilization.

The remaining subcomponents would require inspection of facilities and interviews with instructors.

D. Recommended Research and Development

1. The collection and examination of job descriptions corresponding to each area of vocational training to determine required competencies and the facilities needed to develop those competencies. This information would facilitate the development of program objectives and the identification of facilities needed to meet those objectives.
2. A survey of employers in various vocational areas of instruction to determine the brand names and models of equipment commonly used in business and industry. This information would provide one important basis for decisions concerning the purchase of facilities.
3. Compilation of a handbook for vocational educators giving lay interpretations of OSHA and other safety standards applicable to vocational education.
4. Compilation of a list of vendors who have agreed to sell, rent, or maintain equipment to vocational education programs on favorable terms.

VII. PROGRAM STAFFING AND ADMINISTRATION

A. General Rationale

Program staffing and administration are elements of all components of the vocational education system and are at least indirectly addressed in other proposed components of the evaluation model. This component is intended as a more direct assessment of program administrative functioning.

B. Subcomponents

1. Staffing Plan
   a. Organizational structure. Are the relationships among staff members clear and conducive to intra-staff communication?
   b. Staff assignments and job descriptions. Are the responsibilities of staff members delineated? Are they related to program objectives?
   c. Staff qualifications. Are they consistent with job descriptions? In the case of instructional personnel, are all state and local requirements met? Do teachers possess demonstrated competencies in their instructional areas?
   d. Consultants from within and outside of the program. If consultants are used, how are they used?
   e. Staff utilization. Do staff members spend most of their time on appropriately assigned responsibilities?

f. Staff communications. Are working relationships among members established? Does the staff meet periodically for group planning?

2. Fiscal control

3. Coordination of multiple programs. Are there provisions for the coordination of multiple programs at a given site and programs in a given instructional area within a region?

4. Ethical practices

a. Procedures for phasing out old programs. Are the interests of students currently enrolled in a discontinued program safeguarded?

b. Tuition and fee refund policies. Are policies stated and followed?

C. Possible Data Collection Approaches

Interviews with each staff member will be needed. Other possible sources of information are organizational charts, job descriptions, employment applications, and minutes from staff meetings.

D. Recommended Research and Development

1. An analysis of existing practices of personnel selection, including job requirements and selection criteria for all staff positions in the vocational program.

VIII. COMMUNITY INVOLVEMENT

A. General Rationale

The vocational education system is intended to be responsive to community needs. At the same time, the community can provide valuable resources to the vocational education system. Such a mutual exchange of services requires a functioning interface between educational institutions and the working community.

B. Subcomponents

1. Efforts to identify and tap community resources. Community-based programs such as co-op and work-study clearly require the cooperation and involvement of community employers. Local businesses may also provide financial assistance, materials, facilities and personnel to enhance the school vocational program. Have efforts been made to elicit community support of vocational education? What successes have been shown? Is it likely that further effort in this area would be beneficial to the program?

2. Advisory Committees.

Advisory committees are intended to provide a contact point between vocational education and the community. Following are some questions relating to their functioning:

a. Does one exist for the institution, as required by law?

b. Does one exist for each program, as required by law?

c. Who are their members? Is the representation appropriate for each program? for the institution?

d. How often do they meet?

e. What do they do?

C. Possible Data Collection Approaches

Interviews with program directors and others responsible for community relations would provide some insight concerning experiences with community resources. Observations of advisory committee meetings and interviews with committee members may be recommended. Minutes could indicate both the frequency and functions of committee meetings.

D. Recommended Research and Development

1. Describe the composition and activities of a large sample of advisory committees. Identify those factors which lead to effective involvement of committees in the vocational program.

IX. YOUTH ORGANIZATIONS

A. General Rationale

Youth organizations can provide valuable experiences relating to a program's objectives and may also be used as a mechanism for student input into instructional program planning.

B. Subcomponents

1. Membership
2. Objectives

   Are the organization's objectives complementary to curricular objectives?
3. Activities
4. Role in program policy-making

   Do students have any influence over the instructional program?

C. Possible Data Collection Approaches

The organization's constitution, by-laws, membership roles, and minutes of meetings will give an indication of 1, 2, and 3 above. Interviews with the organization's officers and sponsors may also be needed.

D. Recommended Research and Development

1. Pilot projects at both the secondary and post-secondary levels in which student organizations have heavy influence in program planning and execution. Proposals for such projects should delineate the responsibilities to be delegated to students and plans for evaluating the effectiveness of the project.

X. COOPERATIVE PROGRAMS

A. General Rationale

All components of the comprehensive evaluation model apply to cooperative programs as well as regular ones, but some characteristics of co-op programs require unique evaluation approaches.

B. Subcomponents

1. Transportation arrangements. Can students without cars participate in co-op programs?
2. Training agreements
   a. Are they maintained?
   b. Do agreements specify appropriate competencies to be developed?
3. Coordination between teacher-coordinator and employer:
   a. How often are training stations visited?
   b. Are training agreements enforced?
   c. How is classroom instruction related to job experience?
4. Compliance with applicable employment laws.

C. Possible Data Collection Approaches

1. Training agreement records.
2. Teacher-coordinator itineraries.
3. Interviews with teacher-coordinators, employers, and students.

D. Recommended Research and Development

1. Compile a manual describing state and federal employment regulations as they apply to co-op and work-study programs, including minimum wage, equal opportunity, and child labor laws.

XI. PROGRAM'S EFFECTS ON STUDENTS

A. General Rationale

The major goal of vocational education is to prepare students for employment. The assessment of this goal's attainment is therefore an essential component of the evaluation system.

B. Subcomponents

1. Vocational skills acquisition. To what extent do students attain the competencies the program is intended to develop? Student success on licensing exams is one relevant criterion for some programs.
2. Work-related personal skills. If the program objectives include the development of positive work attitudes, good work habits, job-seeking skills, or other non-technical skills, these should also be assessed.

3. Employability of program leavers. Subcomponents 1 and 2 address the potential employability of program leavers. Follow-up data indicate actual success in securing employment by showing the number who become
   a. employed in exact area of training.
   b. employed in an area related to training.
   c. employed in unrelated areas.
   d. unemployed
   e. enrolled in further related training programs.
   f. enrolled in unrelated training programs.
4. At the adult level, change in income or job position as a result of the program may be more appropriate than 3 above.

C. Possible Data Collection Approaches

Subcomponents 1 and 2 would be best assessed by examination of results of existing student testing, including classroom skills tests and licensing exams. Limited skill testing for the purpose of program evaluation may be desirable, but is likely to be costly and time consuming.

Where student follow-up information is collected and kept on file, subcomponents 3 and 4 could be easily assessed.

D. Recommended Research and Development

1. After job titles are matched to vocational program names and those jobs are analyzed according to required competencies, develop techniques for measuring students' competency levels on tasks required of the job.
2. Develop a transportable model for following up program leavers. The model should include questionnaires addressing a variety of evaluation needs, recommendations concerning the logistics of the follow-up survey, guidelines for sampling plans, and suggestions for data analysis, interpretation, and utilization.

XII. HOLDING POWER AND POPULARITY

A. General Rationale

Several unobtrusive measures of student perceptions of vocational programs are suggested here. These data may indicate the desirability of discontinuing, maintaining, expanding, or revising programs.

B. Subcomponents

1. The number of applicants to the program.
   Whereas projected demands may be estimated in the needs assessment preceding the program's institution, the actual demand should also be considered.

2. Number of transfers into and out of each program within the institution. Students attending an institution generally have extensive first- and second-hand experience with most programs within the institution. Their tendencies to transfer into and out of various programs are based upon relatively reliable information and should be considered seriously.
3. Number of program beginners completing the program. If a large percentage of those initiating the program drop out before completion, the reasons for this should be examined. There may be a need to revise the program itself and/or its selection procedures. On the other hand, it is possible that many students are able to attain their personal training objectives before officially graduating.

C. Data Collection Approaches

School records should contain all data needed for this component.

D. Recommended Research and Development

None recommended.

XIII. SATISFACTION OF VARIOUS AUDIENCES WITH PROGRAM

A. General Rationale

All participants in and audiences of vocational education can provide valuable feedback to the program. Their reactions to the present program and suggestions for improvement should be carefully considered in making future plans.

B. Subcomponents

The following groups may be surveyed in order to identify their perceptions of various aspects of the institution and its programs and to elicit their recommendations for program revision.

1. Program staff
2. Students
3. Ex-students
4. Parents (at the secondary level only)
5. Employers
6. Non-vocational educators

C. Data Collection Approaches

Questionnaires and/or interviews.

D. Recommended Research and Development

1. Develop questionnaire forms and interview guides.
2. Initiate pilot follow-up studies to develop effective follow-up models and forms.